Amendments to the Claims:

This listing of claims will replace all prior versions, and listings of claims in the application:

Listing of Claims:

Claim 1. (currently amended) A method for locating a timing mark (TM) on a rotating disk of a disk drive, the disk having a plurality of tracks, each track having a plurality of timing sections containing a preamble represented as a preamble pattern of at least n bits, and a TM following the preamble, the method comprising:

representing said TM as a TM pattern of n bits, wherein said TM pattern has a pre-shift sliding distance d1 to the concatenation of said preamble pattern with said TM pattern, and has a post-shift sliding distance (d2; m) to said TM pattern, said TM pattern being referred to as a (n, d1, d2, m) pattern, wherein said TM pattern satisfies an optimality condition selected from the group consisting of: m is maximal given n, d1, and d2; d1 is maximal given n, d2, and m; d2 is maximal given n, d1, and m; and n is minimal given d1, d2, and m;

reading a bit stream from said track; and

searching for said TM bit pattern within an TM search window which nominally extends m bits past the last bit of the [S]TM on the disk and at least n bits before the first bit of the [S]TM on the disk.

Claim 2. (original) The method of claim 1, wherein said timing marks are followed by data on said tracks.

Claim 3. (original) The method of claim 1, wherein said timing marks are followed by servo position information on said tracks.

Claim 4. (original) The method of claim 3, further comprising:

providing an actuator connected to said head for positioning said head to one of said tracks and maintaining said head on said one of said tracks; and

controlling the actuator in response to said servo position information read by said head after detection of said TMs by said TM decoder.

Claim 5. (original) The method of claim 1, wherein the sliding distances d1 and (d2; m) are bitwise Hamming distances.

Claim 6. (original) The method of claim 1, wherein the sliding distances d1 and (d2; m) are j-bit burst Hamming distances.

Claim 7. (original) The method of claim 1, wherein said TM pattern is a member of a set of (n, d1, d2, m) patterns, wherein all members of the set have the same n, the same d1, the same d2 and the same m, said set having at least two members.

Claim 8. (currently amended) The method of claim 7, wherein each member j of said set has a longest run of zeros with length L(j), and said [S]TM pattern is a member of said set with minimal L(j).

Claim 9. (original) The method of claim 7, wherein said TM pattern is a member of said set having a maximal number of ones.

Claim 10. (original) The method of claim 1, wherein said post-shift sliding distance (d2; m) is the minimum distance between the first n-k bits of said TM bit pattern and the last n-k bits of said TM bit pattern as integer k is varied from 1 to m inclusive.

Claim 11. (original) The method of claim 1, further comprising providing a postscript adjacent to and positioned after the TM in each of said timing sections, the postscript being represented as a postscript bit pattern having at least n bits.

Claim 12. (currently amended) The method of claim 11, wherein said post-shift sliding distance (d2; m) is the minimum distance between said TM pattern and bits k+1 through n+k of a concatenation of said [S]TM bit pattern followed by said postscript bit pattern.

Claim 13. (original) The method of claim 1, wherein d2 is greater than 2.

Claim 14. (original) The method of claim 13, wherein m is greater than 2.

Claim 15. (original) The method of claim 1, wherein m is greater than 2.

Claim 16. (original) The method of claim 1, wherein said disk comprises a magnetic disk.

Claim 17. (original) The method of claim 1, wherein said disk comprises an optical disk.